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ABSTRACT

This paper presents an analysis of teachers' classroom language as measured by the Teacher Language Instrument (TLI). Subjects were teachers in four programs of the Mt. Druitt Early Childhood Project for Year One level (6-year-old) children. The four programs were identified as "behaviorist," "cognitive," "competency," and "contemporary." Data were collected from four school sites during July 1979. Program teachers at each school were filmed and their verbal interactions were recorded in ten minute segments. Their language was analyzed in terms of mode (teacher structuring of response) and function (impact of context). The following are some of the characteristics of teaching interaction identified in the four programs. Teachers in the cognitive, competency and contemporary programs showed a similar pattern, while the behaviorist teachers differed from them in terms of the frequency of questioning and reinforcing behaviors. The behaviorist teachers questioned less and reinforced more for all programs. Stating was the most commonly occurring mode of verbal behavior among teachers, but was more heavily used by the behaviorist teachers. Teachers in the contemporary program used language directed towards a social interaction function much more frequently than teachers in the other three programs. The resource function was used much more and the heuristic function much less by the behaviorist teachers.
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FORM AND FUNCTION IN THE LANGUAGE

OF YEAR ONE TEACHERS

Jillian Belme and Anne Gray

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This draft paper reports specific aspects of evaluation activities not presented in detail in the Project's Final Report. Comments or requests for further information may be addressed to the Project, care of the above address.

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PREFACE

This report presents an analysis of the classroom language of the teachers involved in the program of the Mt Druitt Early Childhood Project at Year One level. Data has been previously collected on preschool teachers' language, using the same instrument and techniques.

The Teacher Language Instrument (T.L.I.) represented part of the process evaluation of the Project. The instrument was designed to give essential information on the implementation of four of the programs associated with the Project, as shown by the performance of teachers in the classroom.

The language of teachers is analysed in terms of form and function. This report outlines the different characteristics of teaching interaction in the four programs.

Patricia Jupp's and Anne Clark's efforts in data reduction and coding are gratefully acknowledged.

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Introduction

The Teacher Language Instrument (T.L.I.) is a process instrument devised for the Mt Druitt Early Childhood Project. This is a major evaluation project which attempts to assess the effects that five different programs have on the children enrolled in them. The major research emphasis was at the preschool level, where data was collected in 1977. However, continued funding meant that the programs could be offered to the group of children who were in the preschools in 1977 for a further two years. This ensured continuity of curriculum experiences through the Kindergarten and Year One levels of schooling. This report is concerned with describing the classroom processes with regard to teacher language in four of the programs at the Year One level.*

Comprehensive process evaluation is an essential component in educational research where pupil achievement is seen in terms of experiences offered in school. Program effects can only be stated with confidence, if it can be shown that the programs were implemented as stated in their objectives. The Mt Druitt Early Childhood Project used two observation systems to verify program implementation. Each of these instruments served different purposes. A broad category system, the PROSE, analysed the nature of the main interactions in the classroom and collected more general data on classroom context and climate. It was intended that the T.L.I. would provide a detailed analysis of teacher language which would supplement information yielded by the PROSE. The T.L.I. would focus on the subtleties of classroom events by examining the language teachers use in terms of <u>form</u> (teacher structuring of response) and <u>function</u> (impact on context).

Review of Research

a) Classroom Observation Systems

As the amount of experimental research into school programs increases, it is becoming evident that the role of the teacher is an important factor in ensuring the successful implementation of a particular program (Stallings, 1975). Therefore, there is a good reason to focus on teacher behaviour more closely, so that the teaching/learning process can be better understood. Some researchers claim that process variables influence learning more than any "reordering or restructuring of the curriculum in the classical sense" (Simon & Boyer, 1968).

In particular, classroom verbal interaction is a complex process and the vehicle for much of the transmission of information in a classroom. Moreover, it seems reasonable to hypothesise that the patterns of language that the teacher uses influence the development of thought patterns in the pupils. It seems worthwhile, therefore, to try to uncover the subtleties that linguisitic messages carry in a classroom so that the teaching/learning process might be more fully described.

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* The T.L.I. was not used to assess the Home Base Program because it was not appropriate to the goals of that program. The implementation of the four centre-based programs (i.e. the Behaviourists, Cognitive, Competency and Contemporary Programs) was assessed using the T.L.I.

Observation systems have been used to give feedback to teachers about their own teaching behaviours and the effects of those behaviours on the quantity and quality of pupil participation in the classroom. The Verbal Interaction Category System (VICS) (Amidon & Hunter, 1966) and the Flanders System of Interaction Analysis (Flanders, 1966) were basic and influential in this field. Both of these systems, particularly the Flanders, have been widely used in research and the kind of information given is useful within the limits of the broad categories comprising these instruments.

Both systems distinguish major categories of teacher-initiated talk, e.g. gives information, gives direction, asks narrow question, asks broad question. The Flanders system, with seven categories of teacher talk allows the researcher to distinguish teacher utterances which have indirect influence, i.e. accepts feeling, praises or encourages, accepts or cues ideas of student, asks questions; and those which have direct influence, i.e. lecturing, giving direction, criticising or justifying authority. With only these seven categories the Flanders system is not enough to record all the interactions present in teacher-directed classrooms and other researchers have devised other instruments to extend upon the Flander's instrument.

The present research task required a more detailed instrument dealing with teacher talk alone. However, very few instruments available concentrate solely on teacher behaviour. Most look at both teacher and student behaviour, usually in attempts to link classroom process variables to pupil product measures (Miller et al., 1970; Wright & Nuthall, 1970) or to relate teacher process variables to pupil process variables (Spaulding, 1969). Only three instruments concentrate on teacher language alone (Joyce & Hodges, 1966; Miller, 1966; Withall, 1949).

The Social-Emotional Climate Index (Withall, 1949) is a very early work in the field and provides information on the social-emotional climate being induced by the teacher. Category descriptors included interpretive comments to assist in the coding of utterances. Teaching verbal behaviours to be coded were at least partially differentiated by the dominant intent of the utterances. Recognition of the importance of context in determining the form and content of teacher utterances is built into the functional dimensions of the T.L.I.

Two other systems, analysing only teacher talk, the Joyce System (Joyce & Jodges, 1966) and the Teaching Behaviour in Pupil-Teacher Interaction (Miller, 1966) are systems with broad categories for classifying utterances in terms of teaching activity, e.g., sanctions, handling information, etc. Important contextual information is also recorded by these instruments, e.g., the roles adopted by teachers and pupils in any particular interaction.

While these systems had attractive features, they were not suitable for the present research. Firstly, their categories were too general to yield the detailed type of data required. Secondly, their organisation and emphasis is often inappropriate to conditions and events in an infants' school setting. It was decided to devise an instrument from a body of research focussing on a linguistic analysis of classroom interaction, and particularly teacher speech.

b) Linguistic Analyses of Teacher Behaviour

It has long been recognised that the classroom is a linguistic context and that many judgements about the behaviour of teachers are based on what teachers say. However, few researchers have assessed teacher language in a qualitative way. Detailed linguistic analyses of teacher language were given new impetus by the contribution of the transformational grammarians which provided more flexible tools for language description (Chomsky, 1965). More sensitive issues were revealed by the thesis that the language of various groups differs in systematic ways (Bernstein, 1972; Labov, 1968). Bernstein's research indicated that an 'elaborated' code characterized by a more complex syntax and more precise reference, is more suited to abstract reasoning than a 'restricted' code lacking these features. The school context moreover, is characterised by teachers who use an elaborated code and expect pupils to communicate in it. Some groups, in particular working class children and black children in the U.S., are disadvantaged by the mismatch of language systems used at school and in their homes. The effect of this situation on the achievement of these children in a standard school setting is obvious.

A recent review of studies analysing the linguistic features of teacher speech reveals the development of emphases in the field (Dunkin & Biddle, 1974). Some studies deal with an analysis of specific teacher language behaviours such as explaining (Hiller, Fisher & Kaes, 1969), while others examine broad linguistic contexts (Cambourne, 1971). More relevant to the present research, was a scale developed to examine the behaviour of teachers and caretakers in residential nurseries (Tizard, et al., 1976). This instrument had useful categories describing teacher (or caretaker) speech. All of these studies provided useful empirical data for the development of the present instrument (T.L.I.).

c) Functional Analyses of Teacher Language

An early attempt to assess the roles and functions of speech in the classroom was carried out by Bellack & Davitz (1966). Classroom language in this study is viewed as the main mediator of teaching interaction. Although the primary function of language in the classrooms is to communicate meaning, Bellack believed that language also initiated specific 'pedagogical moves' and affected classroom climate. These pedagogical moves were defined by their function in the total discourse and were structuring, soliciting, responding, and reacting.

The main categories for teacher talk were discourse pertaining to subject matter, to instructional management (i.e. classroom activities and assignments) and to the logical and extralogical operations entailed in these areas (i.e. definition, explanation, statement of facts, opinion, justification and evaluation).

Bellack et al reported that teachers were responsible for most of the soliciting (86%), structuring (86%) and reacting moves (81%) in the classroom, while pupils did most of the responding (88%). Nearly half (47%) of the moves served a managerial function, and 63% involved logical operations. Most of the statements (80%) involving logical operations were statements of fact and explanations.

Bellack's study concentrated on high school conditions, where one would expect that intensive efforts by the teacher to communicate complex information would occur. The situation in the primary and infants' school is different in kind. The nature of teacher/child interaction is varied and for certain sections of the day, instruction may not be the major component of teachers' interaction with children.

Research into the functions of language by sociolinguists has led to new insight into the field of describing language in the classroom. The aim of this research is to provide a typology of the purposes for which language is predominantly used in different situations (Hymes, 1962). Halliday (1973) developed a set of categories, based on children's language development, which was stimulating to teachers and educationists. Some of this interest has focussed at the pre-school level, where a schedule for describing the functions of children's spontaneous speech was developed (Tough, 1974).

This methodology suggested by this philosophy and used by researchers is one of 'thoughtful observation' (Criper & Davies, 1974). This work is mostly descriptive, and an attempt is made to get behind the form of the interaction to describe the function of that interaction (Barnes, 1973; Barnes, Britten & Rosen, 1971). It has implications for teacher education because analyses of this kind can alert teachers to the often unconsidered results of the way that they operate verbally in the classroom.

In a study into the language of teachers in first grade classrooms, Mishler looked at the functions language serves in developing cognitive concepts and more sophisticated language in the children (Mishler, 1972). He claimed language conveys not only different cognitive strategies, but also different values and norms. This thesis was examined in relation to the structure of teacher's statements and on the types of interchange developed between them and the children. He analysed the language used by teachers in several first grade classrooms and found that teachers differed in the effectiveness of their language to achieve certain ends. Aspects of teacher/pupil behaviour studied were focusing of attention, information search and evaluation, the structuring of alternatives, the orienting of children to language, the role of authority, and the promotion of group processes.

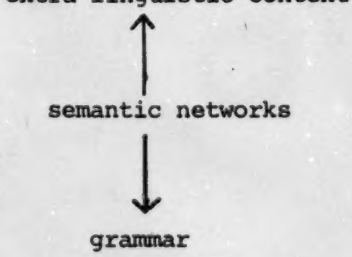
In another study analysing teacher behaviour in an open classroom in first grade, some examples of teacher language are classified according to form and function (Resnick, 1972). Questions comprised a high percentage of utterances directed by the teacher to the child, (45% to 69%). These questions were coded into three categories, substantive, personal and management. The vast majority of questions were substantive, i.e. related to the content of the task. (50.4%) There were also questions related to the child's feelings (personal) and related to the management of instruction (management). The last category was the major means used by teachers to get children to focus on an activity, and carry it through. Questions related to where and with whom the child would like to work, and what materials he planned to use.

Another study at the secondary school level examined the hypothesis that secondary school teachers devote a great deal of time and effort simply to 'keep in touch with their pupils' (Stubbs, 1976). During observation period in the classroom, Stubbs took down detailed notes of teacher speech and the situations in which it occurred. He then formulated these into a coding scheme comprising the categories of attracting or showing attention, controlling the amount of speech, checking or confirming understanding, summarising, defining, editing, correcting, specifying topic. The main purpose of this study was to demonstrate how functional categories may be derived from recordings of teacher/pupil talk, and no data were given.

These data do suggest that teachers modified the type of language they used to fit the general classroom conditions and the particular task at hand. Resnick's data suggested that the use of questions for a management of instruction function could have the effect of developing enquiry habits in the children by modelling an effective form of enquiry, the question. The area of functions of language has alerted researchers to the indirect as well as direct effects that teacher's language has in the classroom.

Theoretical Bases of the T.L.I.

In its structure and use, the T.L.I. is a classroom observation instrument, but its categories of function are derived from the linguistic research of M.A.K. Halliday. Halliday sees language as 'meaning potential' and language forms represent the speaker's choice of tools in realising the meaning intended. At the semantic or 'input' level, the speaker has the potentiality for describing events, behaviours, ideas, etc. in language. At this point two other factors become relevant to a full interpretation of the speech event: the social situation on the one hand and the grammatical system of the language on the other. This relationship can be represented.



The extra linguistic context becomes an integral part of any communication in that it influences the choice of linguistic form used and adds meaning to forms used in communication. Two types of contexts can be identified: the social and situational contexts (Halliday, 1973). The social aspects of language include the establishment and maintenance of the individual's social roles, the establishment of familiarity and distance, types of personal interaction, etc. In situational settings, language is used to establish the structures governing the behaviour of the participants, as in transaction of various kinds, e.g., tasks, games, discussions.

These sociological underpinnings are necessary for an understanding of functions of language, since all verbal communication takes place in a social context. The classroom is a social environment, where certain relationships and activities are initiated and maintained by the use of language. It certainly has the features of a situational context, and over time would incorporate the more generalised social aspects of language, e.g., as in adult/child or child/child interactions.

Within these settings, language can be viewed as serving two quite distinct 'macro functions' - the ideational and interpersonal functions (Halliday, 1973). Briefly, the ideational function is language used for the expression of content, while the interpersonal function encompasses the expression of comments, attitudes and evaluations. Most importantly, the interpersonal function reveals the role the speaker adopts vis-a-vis the listener in the language forms used, e.g., as in informing, questioning, greeting, persuading, etc.

The functional theory of language put forward by Halliday has meaning at its core. It is concerned with all features, contextual and linguistic which influence the way in which meaning is conveyed. Most importantly, it establishes a broader sociological perspective of language use and makes a more detailed examination of individual uses of language possible.

Description of the Teacher Language Instrument

The T.L.I. is an observation instrument which categorises each verbal episode of a teaching interchange for both mode (i.e. linguistic behaviour) and function (i.e. meaning or effect). This form of coding was decided upon because it best suited the empirical nature of the research. At the most theoretical level, this procedure is not desirable, because it ignores the quality of coherence which all language texts have. Moreover, a single construction may have more than one function (Halliday, 1973). Practically, however, it does permit a more detailed description of teacher language than has been so far attempted.

The Mode of a Verbal Episode

As the instrument was originally conceived, the mode of the verbal episode was defined by its grammatical form, e.g., statement, question, command, etc. This definition meant that much important information was lost because essential features of teaching interchanges were oversimplified. It was not possible completely to separate the form of an utterance from its context. Different types of questions, for example, could be distinguished by the type of response the teacher expected, e.g., yes/no, or an elaborated answer. This is a legitimate basis for distinction because the kind of response sought will influence a teacher's selection of question form.

Other researchers in the field had faced similar difficulties in devising observation instruments. These experiences assisted in defining the mode categories for the T.L.I. For example, the stating mode differentiates between statements which deal with the use of materials (show) and statements which convey verbal information only (Stallings, 1975). Similarly, the questioning mode has the category of

socratic question which encompasses the syntactic category of wh-question. Socratic questions are those which the teacher employs to assist the child in solving a problem or clarifying his ideas (Tizard et al., 1976).

There are five general mode categories of teacher language behaviour, i.e. statements, questions, imperatives, reinforcers and facilitators. These mode categories were subdivided into specific language behaviours (See Figure 1).

The Function of a Verbal Episode

Categories in the function dimension aim to describe the major effect or impact an utterance has or is intended to have. The notion of functions in language is important in descriptions of language which are sociologically based. The language functions use in the T.L.I. however, were developed from those of Michael Halliday (Halliday, 1973). The language functions devised by Halliday were developmental, i.e., they evolved from an attempt to describe the stages by which children acquired language (see Appendix A for list). Observation at the preschool, where the instrument was developed, demonstrated that exclusive categories for adult language could not be formed from these basic functions. In particular, the language of instruction itself could not be defined under one functional category. For example, teachers used the language of instruction for regulatory and heuristic functions. This led to an expansion and refinement of the regulatory and heuristic functions. This was the major modification of the original set of functions. The instrumental function, while a developmentally important one for young children's language, did not feature in the language of adults, and was deleted from the final form of the instrument.

There were five general categories of function, i.e. regulatory, heuristic, social, administrative and resource. These were further subdivided and in the final form, 6 of the 7 functions defined by Halliday are incorporated. Others such as motivate, evaluate, administrative and resource, developed from a need to describe functions specific to the teaching context (see Figure 1). A complete description of all categories can be found in Appendix B. Following trial sessions in preschools in which all ongoing teacher verbal behaviour was coded, the mode and function categories were mapped onto a single matrix, so that any verbal episode could be coded for both mode and function (see Figure 1).

The Verbal Episode

The data was scored directly from the videotape. The unit of analysis was the verbal episode. Two peices of information were recorded for each verbal episode: mode and function. The boundaries of verbal episodes were marked according to various criteria, which were developed from an examination of transcripts of videotapes. A new episode began

(i) after a change in mode and/or function, e.g. when an explanation follows a command or statement;

(ii) with a new utterance, i.e., one that adds information, and no change in mode and function, e.g., as in a series of discrete pieces of information, or a series of clauses joined by 'and'.

Incomplete or inaudible utterances were not scored.

TEACHER LANGUAGE INSTRUMENT

MODE	FUNCTION														
	REGULATORY				HEURISTIC			SOCIAL							
STATING	Motivate	Instruct	Control	TOTAL Regulatory	Evaluative	Knowledge	TOTAL Heuristic	Social Interaction	Personal	Imagine	TOTAL Social	ADMINISTRA-TIVE	RESOURCE	TOTAL
Show														
Tell														
Lead														
TOTAL Stating														
QUESTIONING														
Simple														
Open														
Socratic														
TOTAL Questioning														
ELICITING														
Command														
Request														
Recognition														
TOTAL Eliciting														
REINFORCING														
General Praise														
Specific Praise														
Negative														
TOTAL Reinforcing														
FACILITATING														
Affirmative														
Response														
TOTAL Facilitating														
TOTAL														

FIGURE 1: Scoresheet showing the mode and function categories of the T.L.I.

Collection of Data

The data was collected on videotape at the four school sites during July 1979. Sound quality was ensured by the use of radio microphones. The events of the day were sampled using a mixture of event and time-sampling procedures. Samples of teacher speech were recorded every fifteen minutes during the day, with the provision for the collection of extra data should a significant event occur between time-sampling periods . The teachers of the program at each school were filmed and their verbal interactions were recorded in ten minute segments. All contexts prescribed by the program, e.g., small group/large group/ individual interactions were taped. The effect of different conditions imposed by curricula on teachers' language could then be assessed. Mid-year taping was chosen because programs had been fully implemented, and because there were no other research activities going on at that time.

Results

The main emphasis in data analysis was to describe teacher language in the four programs, and to point out any differences that were evident.

The data was analysed using the SPSS Condescriptive program so that a percentage breakdown of the different teacher verbal behaviours and functions could be examined for each program. The percentages of all categories and subcategories for both mode and function for all four programs are set out in Appendix C. The percentage data was then ranked in terms of total percentages on the broad categories of mode and function and then ranks compared across programs (see Table 1).

TABLE 1: Ranks of broad categories of the T.L.I. for the four programs

		PROGRAM			
Rank		Behaviourist	Cognitive	Competency	Contemporary
A.	Mode				
	1.	Stating (40.06%)	Stating (32.34%)	Stating (24.64%)	Stating (24.68%)
	2.	Eliciting (19.89%)	Facilitating (24.64%)	Eliciting (24.79%)	Facilitating (24.49%)
	3.	Facilitating (15.76%)	Questioning (21.55%)	Questioning (20.37%)	Questioning (21.52%)
	4.	Reinforcing (12.24%)	Eliciting (16.45%)	Facilitating (20.37%)	Eliciting (20.41%)
	5.	Questioning (11.71%)	Reinforcing (7.19%)	Reinforcing (9.8%)	Reinforcing (8.9%)

Cont'd..

Rank	Behaviourist	Cognitive	Competency	Contemporary
B. Function				
1.	Regulatory (38.64%)	Regulatory (31.02%)	Regulatory (42.88%)	Regulatory (35.07%)
2.	Resource (26.42%)	Heuristic (29.18%)	Heuristic (29.21%)	Social (32.65%)
3.	Social (18.18%)	Social (23.65%)	Social (21.23%)	Heuristic (24.11%)
4.	Heuristic (13.75%)	Resource (16.24%)	Resource (6.41%)	Resource (7.61%)
5.	Administrative (3.01%)	Administrative (0.67%)	Administrative (6.28%)	Administrative (7.61%)

In terms of the mode of utterances, teachers in the Cognitive, Competency and Contemporary programs showed a similar pattern, while the Behaviourist teachers differed from them in terms of the frequency of questioning and reinforcing behaviours. The Behaviourist teachers questioned less and reinforced more (see Table 1). For all programs, stating was the most commonly occurring mode, but was more heavily used by the Behaviourist teachers than teachers in the other programs. The Cognitive teachers showed more instances of stating than the Competency or Contemporary teachers (see Figure 2).

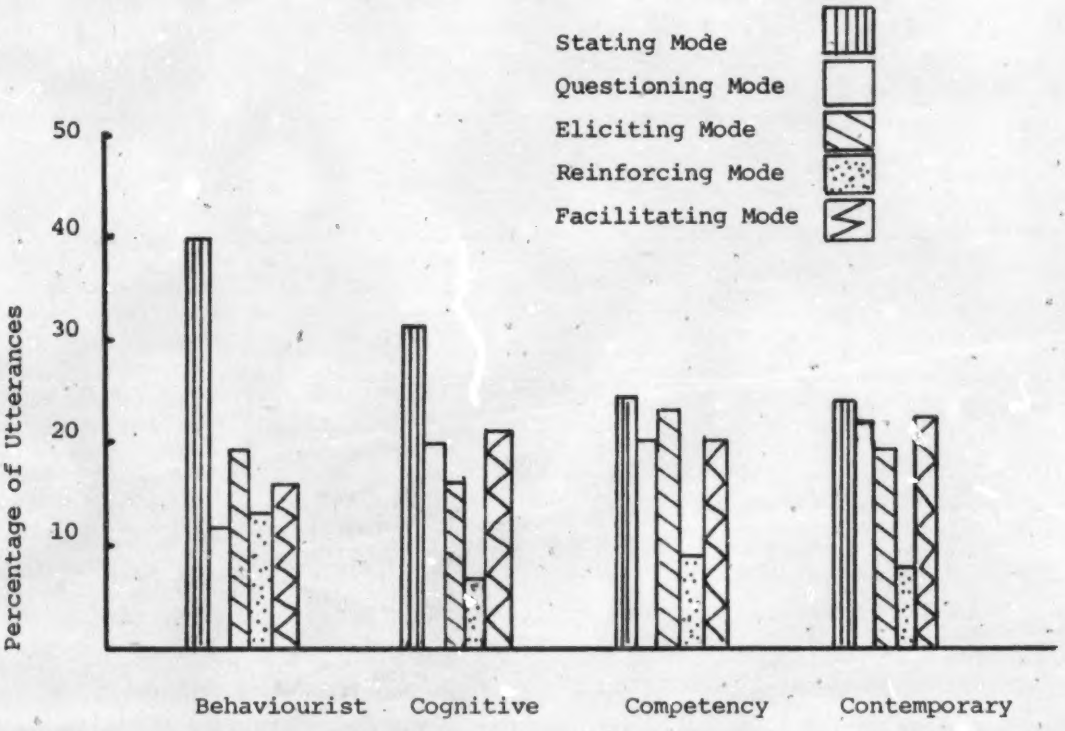


FIGURE 2: Percentage distribution of mode use by teachers in four programs

An examination of the rankings and respective percentages of the eliciting and facilitating modes point to interesting trends (see Figure 2). In the Behaviourist and Competency programs, the eliciting mode is preferred to a facilitating one, while in the Cognitive and Contemporary programs the reverse result occurred. This reflects a difference in teacher language due to program structure, for the Behaviourist and Competency programs are teacher-centred, and the other two are child-centred. One would expect teachers in a child-centred program to exert their authority directly less often and therefore prefer a facilitating mode to an eliciting one.

Another result related to program objectives is the ranks and percentages recorded in the reinforcing mode (see Table 1). As expected the Behaviourist teachers used reinforcement more than teachers in the other programs since it is an integral component of the implementation of the Behaviourist program. The differences were not as large as expected, and it appears that the Behaviourist teachers relied more on the intrinsic reinforcing nature of the materials offered, many of which were self-correcting, than extrinsic verbal praise to shape behaviours. This explanation would be supported by the very high incidence of utterances directed to resource function.

The results of the broad categories for functions, show consistent trends, with two major and important differences (see Figure 3). Teachers used language for a regulatory function more than any other, although the regulatory function encompasses a range of teaching activities which will be discussed. Again the Behaviourist teachers diverged markedly from patterns shown by teachers in other programs; especially in the amount of utterances used by the resource and heuristic functions. The resource function is used much more and the heuristic function much less by Behaviourist teachers. This complements the strategy briefly outlined in the mode categories, indicating that the major instructional effort was through programmed materials which were self correcting. There was also a high incidence of information given in the stating mode and the use of questions for heuristic purposes was low in the Behaviourist program.

The second major difference between the functions of teacher language used in these classrooms is shown on the frequencies recorded for the social function. The teacher in the Contemporary program used language directed towards a social interaction function much more frequently than teachers in the other three programs (see Table 1). Moreover, in contrast to the other programs where language in the social interaction function was ranked third, it was the second ranked verbal behaviour in the Contemporary program. The Contemporary program's objectives emphasised the development of social skills and personal interaction skills in the children, and the large amount of time the teacher spent with the children in verbal interaction for a social function shows a preoccupation with attaining program objectives in this area.

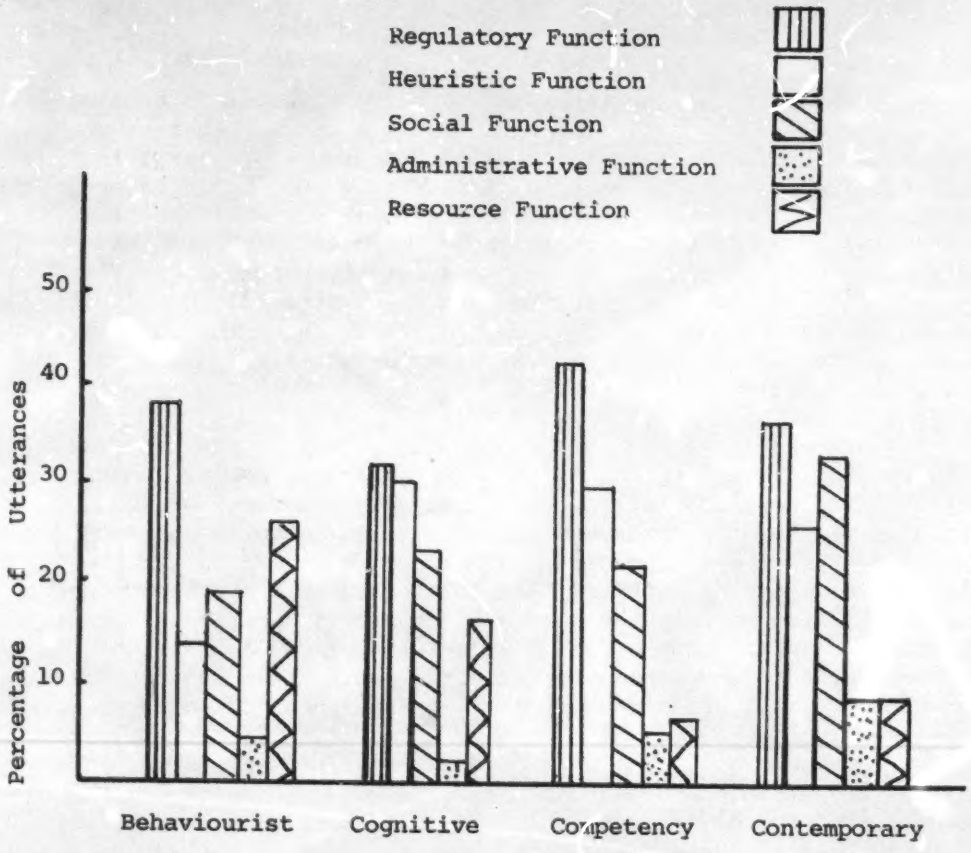


FIGURE 3: Percentage distribution of function use by teachers in four programs

The frequency of behaviours within the categories of the instrument provide[d] more detailed picture of how programs were implemented (see Appendix D). For example, the stating mode was the most frequently occurring mode across all programs, but the frequency of show, tell, and lead behaviours within the stating mode revealed different patterns between the programs. The Behaviourist teachers for example used lead as a major strategy; half of their utterances in the stating mode were of this type, where children and teachers are reciting something together. This is consistent with the principles of the Behaviourist program as implemented, for it emphasised large group activities, complemented by carefully graded individual seat work.

The teacher in the Competency program shows quite a different pattern, with a very low incidence of lead, but a higher incidence of show. The Contemporary and Cognitive program showed different patterns again. The low incidence of lead within the Contemporary program is appropriate since it is a child-centred program, where children determine many of their learning experiences. Teacher contact with children in the Contemporary program produced both show and tell statements in even proportions. The Cognitive teachers, had more lead activities, because the Cognitive program emphasises some teacher-led group activities.

Patterns of questioning were another feature which differentiated between programs (see Appendix C). In the Competency program, Socratic questions occurred more frequently than either simple or open questions, in contrast to the other programs where the preferred form was the simple question (see Appendix C). No teaching style was prescribed for the Competency program although the curriculum was teacher-centred and focussed on the teaching of cognitive and social competencies. The teacher in the Competency program developed this structured questioning style for instructing the children in these competencies.

Eliciting utterances account for between 10% and 25% of teacher utterances. Eliciting utterances occur in situations where the teacher required a response from a child, both verbal and non-verbal. Across all programs commands were more frequently used than requests (see Appendix D). Facilitating utterances seem to perform a complementary function to eliciting ones, and account for the same proportion of teacher talk (16% - 25%). In terms of objectives, one would expect that the teachers in the Contemporary program would facilitate more often than teachers in other programs, because the Contemporary program emphasised that children should have freedom of choice within a flexible, democratic regime. The Contemporary teacher also responded more than teachers in other programs. The Cognitive program stressed that children should learn to control their own learning experiences through practice in planning. Consequently, the teachers in that program preferred the facilitating mode to the eliciting one. However, in the Competency and Behaviourist program, which are teacher centred, the eliciting mode occurred more frequently than the facilitating one.

On the functional categories of the instrument, teachers spent a great deal of time regulating the behaviour of children (31% - 43%). The T.L.I. subcategories of the regulatory function revealed what strategies were used to achieve this management. There was a clear difference between patterns of management of the Cognitive teachers on the one hand, and the Behaviourist, Competency and Contemporary teachers on the other. The Cognitive teachers used the instruct (14.09%) strategy in preference to motivate (8.63%) and the control function was least used (see Appendix C). Teachers in the other programs, however, mostly used a control strategy, followed by instruct with motivate (8.30%) being the least used function to regulate children's behaviour. These differences indicate a strong difference in teaching style; and suggest the value of describing functions of language.

The pattern for the heuristic function was similar across all programs, and that all teachers used the input of information or knowledge for heuristic purposes more often than evaluation. The Cognitive and Competency teachers, who used the heuristic function more often than the other teachers, showed a more even division in their utterances used for the evaluation and knowledge function than the other teachers (see Appendix C).

In the social function, language was used for the purposes of promoting social interaction more frequently than for the personal function, which involves the projection of the teacher's personality. The imagine category, when the teacher participates in dramatic play as an equal with the children, was not used by the Year One teachers, probably because other concerns with basic instruction take precedence.

Discussion

The T.L.I. was designed to assess the language behaviours of teachers implementing four programs of different curriculum orientation. At one extreme, the Contemporary program was flexible in regard to teaching style, emphasising that children regulate their own learning experiences while the Behaviourist program specified teaching routines and curriculum content. The Cognitive program builds its curriculum around Piagetian theories and extrapolates its teaching strategies from it, while the Competency program emphasises developing school-related competencies and pro-social behaviours in the children, but does not specify teaching style.

The following findings were reported for each program.

1) The Behaviourist teachers showed a different pattern of both mode and function from teachers in the other programs. Particularly striking was the low incidence of questioning behaviours, coupled with a high incidence of utterances being directed towards a resource function. This reflected the organisation of the Behaviourist program, where a considerable part of the child's day was involved with seat activities many of which were self correcting. The method of instruction was through lead activities, with questioning not being a prominent teaching behaviour.

2) In the Cognitive program, teachers exerted the regulatory function through an instructional strategy. This reflects the emphasis that the program placed on small group planning and summarizing sessions. The use of heuristic strategies was also a feature, with 30% of utterances serving a heuristic function.

3) The Competency data revealed that the teacher developed a complex teaching style based on socratic questions and show techniques, which derived from the use of carefully selected materials to teach cognitive competencies. As in the Cognitive program there was a strong emphasis on heuristic strategies.

4) The language behaviour of the Contemporary teacher presented a unique pattern in the case of functions. A high percentage of utterances serving the social function was evident in the data from this program. In addition, responding behaviours were a feature, and were appropriate to the implementation of this child-centred program.

While further analysis is necessary to uncover the subtleties of verbal interaction in the classroom, the findings of this study indicate that the four programs were implemented along different guidelines. These differences are reflected in the language of classroom teachers, when considered according to mode and function.

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APPENDIX A

THE FUNCTIONS OF LANGUAGE USED BY CHILDREN

Source: M.A.K. Halliday
'Explorations in the Functions of Language'

1. Instrumental Function: Language used to obtain satisfaction of material needs.

2. Regulatory Function : Language used to regulate the behaviour of others.

3. Interactional Function: The use of language in the interaction between the self and others.

4. Personal Functions: The use of language to promote one's individuality and to express feelings and attitudes.

5. Heuristic Function: The use of language as a means of investigating reality, a way of learning about things.

6. Imaginative Function: The use of language by the child to create his own environment e.g. a 'pretend' world, a world of language play.

7. Representational Function: The use of language to communicate a message which has specific reference to the processes, persons, objects, abstrations, qualities, states and relations of the real world around him.

* * * *

APPENDIX B

CATEGORY DESCRIPTORS

A. Mode of Verbal Episodes

1. The Stating Mode:

The Stating Mode categorises verbal behaviours which pass on new information or affirm that a certain body of information is known.

SHOW: Showing behaviours relating to the use of concrete materials are coded as 'show'. The utterance may aim to demonstrate, illustrate, inform, arouse curiousity, explain, or promote understanding with the aid of materials. These statements may also be used to facilitate or elaborate the child's use of materials - e.g. block building, puzzles, felt board activities, etc.

'Bounce the ball like this/'
'These are circles/ they are all different sizes/ *
some are very big/'
'This hand holds the shape down on the table/see
how I have drawn right around the outside of it/'

* The end of an episode is indicated by a slash, (/).

TELL: Utterances which pass on information are coded as 'tell'. These may include narration or explanation. The interaction, however, does not include the use of materials.

'I'll be collecting them in a while/'
'Flowers grow everywhere/there are many different
kinds of flowers/'
'I'm still waiting for two or three people/'
'Jillian is going to be doing chalk painting/wet
chalk painting for drawing/ and I am going to do
special things with the girls and boys in my group/'

LEAD: Utterances made as the adult and pupils are performing the same verbal activity under the adult's direction are coded as 'lead'. The teacher and children may be singing a song, reciting a rhyme or counting together, for example.

2. The Questioning Mode:

The Questioning Mode classifies the different types of questions teachers ask in terms of teacher intent and the pupil response expected. This category does not include comments in question form.

SIMPLE QUESTION: The teacher asks for information already known, usually in a yes/no answer.

'Have you had your juice?'
'Do you have a pencil?'
'What colour is your jumper?'

OPEN QUESTION: The teacher is putting a question to invite the expression of feelings or opinion on the part of the child. The child may develop on the question as he sees fit, and divergent responses are permissable. The utterance may be phrased in statement form as well as question form.

'What did you do over the holidays?'
'Tell me why you like that story.'
'You're going to live in a tent/ What sort of food do you think you might take?'

SOCRATIC QUESTION: The teacher questions the child with the object of helping him to solve a problem or clarifying his ideas. A series of questions can be asked sequentially to achieve this end.

'If tomorrow's the 13th what will Saturday be?'
'The chair will fall over/ and what will happen to the man?'

Socratic sequence

T. Have you drawn your piggy?
Ch. (Points)
T. Where are his eyes?
Ch. (Points)
T. You have only drawn one eye/ How many eyes do piggies have?
Ch. One
T. How many eyes do doggies have?
Ch. Two
T. How many eyes do pussies have?
Ch. Two
T. How many eyes do cows have?
Ch. Two
T. How many eyes do piggies have then?
Ch. One

3. The Eliciting Mode

All utterances in this category call for a response from the child, either verbal or non-verbal. If a reply was not forthcoming, the adult would most likely re-phrase the utterance. Responses would range from a smile (in response to a greeting) to immediate and obvious modification of behaviour (in response to a command).

COMMAND: The teacher delivers an imperative in the form of an order. This utterance, although at times direct, contains no negative.

'Sit up straight'
'Put the puzzle away'
'Sit down on that side'
'Go and get the writing books, will you?'

REQUEST: The teacher delivers an imperative in the form of a question.
'Would you please close the door?'
'Will you find me something blue, please Joanne?'

RECOGNITION: This category is used for all comments, greetings, personal compliments, and alerting exclamations. These utterances are all teacher initiated.

'Hullo'
'What a nice day it is'
'You look very pretty in red, Jody'
'Ooh! What can we see here?'
'My goodness!'

4. The Reinforcing Mode:

These utterances are contingent upon behaviour by the child.

GENERAL PRAISE: Teacher statements of approval which do not specifically state what behaviour is being praised.

'That's nice'
'Clever boy'
'Good'

SPECIFIC PRAISE: Teacher statements of approval which name the response being praised.

'I love the way you've put the skull and bones on the sails.'
'You're a good girl for putting the blocks away'
'I like your story about your trip, Sue'

NEGATIVE: The teacher responds to incorrect work or inappropriate behaviour through disapproval or corrective feedback. The feedback is phrased in negative statements. The statement could be posed to an individual or a group of children.

'Don't run in the preschool'
'You cannot play in the doll's corner, Jane'
'You didn't cut along the line'

5. The Facilitating Mode:

These utterances promote the smooth flow of the lesson - they are the 'oil to keep the classroom engine running.'

AFFIRMATIVE: This category is used for utterances which provide feedback to the child, confirming a correct response in a 'neutral' way, (e.g. repeating a child's answer). This category is also used for undirected remarks by the teacher, (including self affirmatives, self instructions, self corrections).

'O.K.'
'All right' (undirected)
'That's it'
T: Why did you do that (Ch. explain) T: 'I see'
T: 'Which hand do you hold your crayon in?'
(Ch. 'That hand') T: 'That hand'

RESPONSE: This category is used for responses to a child's question, need, or to a situation initiated by the child.

'Well, never mind'
'Yes, you can cut around it now'
Ch: 'I can't walk on this bar.'
T: 'I'll give you some help/Woops! Climb up again.'

B. Function of Verbal Episodes

1. The Regulatory Function

For all of these utterances the teacher seeks to exercise a degree of influence over the behaviour of the child.

MOTIVATE: Teacher utterances designed to arouse curiousity, stimulate interest, or encourage child to undertake, or persist in an activity.

'We are going to do special stories about red things'
'You really are cutting that so carefully, John,/ good boy/'
'And when you have cut it out very well it will be your own red shape'

INSTRUCT: These are task oriented utterances aimed at facilitating organising and carrying out of tasks or activities by children, by giving directions for tasks and other activities - e.g. allocating, telling what to do or how to do it.

'Then you take the scissors/and cut around this big shape/'
'Write your name on the back of the paper'
'The "Seals" are going to play with blocks or jigsaws'

CONTROL: Utterances used by the teacher to control or manage the child's conduct are coded 'control'. The child's response may be verbal or non-verbal. This category includes a wide range of situations such as when the teacher is being permissive, e.g. giving the child a choice between a number of activities, commanding that a particular activity begin or cease, or supervising routines e.g. pack away time.

'Sit down'
'Are you going to the book area first?'
'Where do you think you might go to play after you get dressed up?'
'You might like to get one of the dolls'
'Watch me Jodie.'

2. The Heuristic Function

Linguistic Strategies which aim to examine the pupils' knowledge and competence fall within the heuristic function, which encompasses all cognitive activities in the classroom.

EVALUATIVE: Included in this function are all utterances designed to assess a child's competence at a verbal or non-verbal task. Teacher language serving an evaluative function often requires information, or the successful manipulation of materials as a response.

'Show me how you can cut'
'What colour is the wet chalk?'
'Is there anything else you can tell me about the picture?'
'Hold up four fingers'
'Will you get me a large blue circle please, Kerry?'

KNOWLEDGE: Teacher language which aims to extend and improve the child's knowledge or understanding about the world or events are coded within the knowledge function. They can range from utterances which are purely descriptive to those which require logical operations, e.g. cause and effect

and condition statements. The teacher may be providing information, or using a probe to get the child to look at what he knows in another way, and to make inferences from that. Improvement in the child's cognitive functioning is an expected outcome.

'An elephant has a really long curling nose/ that picks up his dinner/ and puts it in his mouth'
'There is someone else who wears red trousers/ someone who comes at Christmas time/ and says Ho,Ho,Ho.'

T. 'What's the sun for?
Ch. (No response)
T. 'Where do you find stars?'
Ch. 'Sky'
T. 'Where do you see them?'
Ch. 'Night'
T. 'When does it get light?'
Ch. 'Morning'
T. 'Where do you get light?'
Ch. 'Sun'
T. 'So what's the sun for?'

3. The Social Function:

In this function, the teacher's main intent is to promote and enrich the affective climate of the classroom, by encouraging social interaction and supporting children's efforts through personal involvement and comment.

SOCIAL INTERACTION:

The teacher's utterances are designed to initiate or promote social interaction and group co-operation, or to suggest how a dispute may be avoided or resolved. This category is also used for maintaining a warm and pleasant classroom climate.

'That's a pretty dress, Sue'
'Tell me all about your pet cat, Bill'

PERSONAL: Included in this function are examples of the language used in the projection of aspects of the personality of the teacher, which are relevant to the situation, e.g. the exertion of personal authority, the relation of personal anecdotes, the expression of a personal opinion, preference, interest or pleasure. This category also includes those utterances which are part of the teacher's own personal style, or a habit. e.g., The teacher on completion of marking the roll says to herself 'O.K., finished.'

'I think red is a happy colour'
'I like peanut butter and honey together'

IMAGINE: Language belonging to this function has, as it's aim, the maintenance of role/fantasy play with a child or group of children. The teacher must be involved in the game, and not directing it. The teacher and children have equal status in the game.

'This is a delicious, (pretend), cup of tea.
Can I pass you the sugar, (pretend)'

4. The Administrative Function

Utterance categorised in the Administrative Function aim to expedite the completion of non-curriculum routines eg. the teacher is carrying out a routine enquiry or activity marking the roll, answers phone, reading school notes etc.

'Matthew is not here'
'Who ordered lunch?'
'Who has their zoo money?'

THE RESOURCE FUNCTION: The purpose of statements having a resource function is to inform of the availability of goods and services, or to indicate that the teacher is going to provide some service or goods - eg. prompting when assisting with reading, providing words during written expression.

'I'll show you how to trace'
'You've got a piece of paper on your table'
'The paint is over in the corner'

* * * *

APPENDIX C

TEACHER LANGUAGE INSTRUMENT

YEAR ONE 1979

PERCENTAGE OF OBSERVATIONS IN EACH CATEGORY FOR EACH PROGRAM AND AS A TOTAL

Mode	Behav-iourist	Cognitive	Compet-ency	Contemp-orary	Combined
STATING					
Show	9.45	10.65	15.67	12.62	12.21
Tell	9.80	7.61	6.70	10.02	8.53
Lead	20.91	14.08	2.28	2.05	9.83
Total	40.16	32.34	24.65	24.69	30.57
QUESTIONING					
Simple	7.73	10.31	6.98	12.81	9.45
Open	1.40	6.80	1.85	2.79	3.21
Socratic	2.58	4.44	11.54	6.68	6.31
Total	11.71	21.55	20.37	22.28	18.97
ELICITING					
Command	18.61	12.74	21.94	17.07	17.59
Request	1.07	3.71	2.28	2.97	2.55
Recognition	0.21	0.00	0.59	0.37	0.29
Total	19.89	16.45	24.81	20.41	20.43
REINFORCING					
General Praise	7.73	4.44	5.13	6.31	5.90
Specific Praise	3.36	0.86	0.57	0.94	1.42
Negative	1.15	1.89	4.13	1.68	2.21
Total	12.24	7.19	9.83	8.93	9.53
FACILITATING					
Affirmative	7.95	12.60	9.27	8.91	9.79
Response	7.81	10.04	11.09	15.58	13.16
Total	15.76	22.64	20.36	24.49	22.95

Cont'd...

Cont'd.

TEACHER LANGUAGE INSTRUMENT

YEAR ONE, 1979

PERCENTAGE OF OBSERVATIONS IN EACH CATEGORY FOR EACH PROGRAM AND AS A TOTAL

Function	Behav-iourist	Cognitive	Compet-ency	Contemp-orary	Combined
REGULATORY					
Motivate	11.74	8.63	7.83	6.31	8.54
Instruct	11.87	14.09	12.82	9.47	12.06
Control	15.03	8.30	22.22	19.29	16.21
Total	38.64	31.02	42.87	35.07	36.81
HEURISTIC					
Evaluative	4.59	12.80	13.39	8.53	9.83
Knowledge	9.16	16.38	15.81	15.58	14.98
Total	13.75	29.18	29.20	24.11	24.81
SOCIAL					
Social Inter-action	11.60	14.69	12.11	22.63	15.26
Personal	6.58	8.95	9.12	10.02	8.67
Imagine	0.00	0.00	0.00	0.00	0.00
Total	18.18	23.64	21.23	32.65	23.93
ADMINISTRATIVE	3.01	0.67	0.28	0.56	1.13
RESOURCE	26.42	16.24	6.41	7.61	14.17